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<b>TRANSMITTAL FORM</b> <small>(to be used for all correspondence after initial filing)</small>	Application Number	09/540,178	<b>RECEIVED CENTRAL FAX CENTER MAY 30 2006</b>
	Filing Date	March 31, 2000	
	First Named Inventor	Vogel	
	Art Unit	2623	
	Examiner Name	John Manning	
Total Number of Pages in This Submission	23	Attorney Docket Number	SEDN/244 (DIVA-244)

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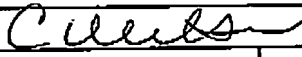
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Appeal Brief  
09/540,178  
Page 2 of 21

**TABLE OF CONTENTS**

1.	Identification Page.....	1
2.	Table of Contents .....	2
3.	Real Party in Interest .....	3
4.	Related Appeals and Interferences .....	4
5.	Status of Claims .....	5
6.	Status of Amendments .....	6
7.	Summary of Claimed Subject Matter .....	7
8.	Grounds of Rejection to be Reviewed on Appeal .....	8
9.	Arguments .....	9
10.	Conclusion .....	14
11.	Claims Appendix .....	15
12.	Evidence Appendix .....	20
13.	Related Proceedings Appendix .....	21

Appeal Brief  
09/540,178  
Page 3 of 21

**Real Party in Interest**

The present application has been assigned to Sedna Patent Services 1500 Market Street, 27th Floor-West Tower, Philadelphia, PA 19102.

Appeal Brief  
09/540,178  
Page 4 of 21

### **Related Appeals and Interferences**

Applicant asserts that no related appeals or interferences are known to the Applicant, the Applicant's legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Appeal Brief  
09/540,178  
Page 5 of 21

### **Status of Claims**

Claims 1-14 and 26 are pending in the application, of which claims 3-13 were originally presented, claims 1, 2, 14, and 26 were previously presented, and claims 15-25 were canceled. Claims 1-14 and 26 were finally rejected. The final rejections of claims 1-14 and 26 are appealed. The pending claims are shown in the attached Claims Appendix.

Appeal Brief  
09/540,178  
Page 6 of 21

### **Status of Amendments**

All claim amendments have been entered by the Examiner. No amendments to the claims were proposed after the final rejection.



Appeal Brief  
09/540,178  
Page 7 of 21

### Summary of Claimed Subject Matter

In a video distribution system 100 has provider equipment including a head-end 101, and associated subscriber equipment 124, an exemplary embodiment of an apparatus for improving fault tolerance is provided as claimed in claim 1. (See generally, Figures 1A, 1B, and 2; page 2, lines 8-15.) The system includes a server 102, a video switch 144<sub>1</sub>, and a number of head-end controllers 130<sub>1</sub>, 130<sub>2</sub>. (See page 5, lines 12-30.) The server 102 comprises a number of server modules 106<sub>1</sub>, 106<sub>2</sub>, 106<sub>3</sub>, 106<sub>P</sub> for storing content. (See page 5, lines 3-11.) The video switch 144<sub>1</sub> is coupled to each server module 106<sub>1</sub>, 106<sub>2</sub>, 106<sub>3</sub>, 106<sub>P</sub> at the head-end 101. (See page 4, line 29 to page 5, line 11.) The video switch 144<sub>1</sub> forwards requested content from at least one of the server modules 106<sub>1</sub>, 106<sub>2</sub>, 106<sub>3</sub>, 106<sub>P</sub> to the subscriber equipment 124<sub>1</sub>, 124<sub>2</sub>, 124<sub>X</sub>. (See page 6, lines 1-18.) The head-end controllers 130<sub>1</sub>, 130<sub>2</sub> are coupled to each server module 106<sub>1</sub>, 106<sub>2</sub>, 106<sub>3</sub>, 106<sub>P</sub> of via at least two signal paths 111<sub>1</sub>, 111<sub>2</sub>, 111<sub>3</sub>, 111<sub>4</sub>, 111<sub>5</sub>, 111<sub>6</sub>, 111<sub>7</sub>, 111<sub>8</sub>. (See page 5, lines 12-20.) Each communication between a head-end controller 130<sub>1</sub>, 130<sub>2</sub> and a server module 106<sub>1</sub>, 106<sub>2</sub>, 106<sub>3</sub>, 106<sub>P</sub> is coincidentally sent through the at least two signal paths 111<sub>1</sub>, 111<sub>2</sub>, 111<sub>3</sub>, 111<sub>4</sub>, 111<sub>5</sub>, 111<sub>6</sub>, 111<sub>7</sub>, 111<sub>8</sub>. (See Figure 2; page 6, line 19 to page 8, line 25.)

Appeal Brief  
09/540,178  
Page 8 of 21

### **Grounds of Rejection to be Reviewed on Appeal**

1. Claims 1-10 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,412,079 to Edmonds (Edmonds) in view of European Patent Application Publication EP0854610 for Imanaka (Imanaka) and U.S. Patent No. 5,889,775 to Sawicz et al. (Sawicz).

2. Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Edmonds in view of Imanaka, Sawicz, and U.S. Patent No. 6,578,158 to Deitz et al. (Deitz).

3. Claims 12-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Edmonds in view of Imanaka, Sawicz, Deitz, and U.S. Patent No. 5,845,061 to Miyamoto et al. (Miyamoto).

Appeal Brief  
09/540,178  
Page 9 of 21

## ARGUMENTS

### **A. Claims 1-10 and 26 are Patentable over the Combination of Edmonds, Imanaka, and Sawicz under §103**

35 U.S.C. 103(a) states “[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

It is not correct for the Examiner merely to focus on the differences between the prior art and the claimed invention and, then, to state that the differences themselves or individually are obvious. The claimed invention as a whole must be considered. “It is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious; . . . [o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) (quoting *in re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

According to MPEP §2143, to establish a *prima facie* case of obviousness under §103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appeal Brief  
09/540,178  
Page 10 of 21

The Examiner has failed to establish a *prima facie* case of obviousness, because the combination of Edmonds, Imanaka, and Sawicz fails to teach or suggest all of the claim elements. For example, the combination of Edmonds, Imanaka, and Sawicz fails to teach the claimed head-end controllers coupled to each server module via at least two signal paths, wherein each communication between a head-end controller and a server module is coincidentally sent through the two signal paths as claimed.

Claim 1 recites, inter alia, "a plurality of head-end controllers coupled to each server module of said plurality of server modules via at least two signal paths, wherein each communication between a head-end controller and a server module is coincidentally sent through the at least two signal paths."

The combination of Edmonds, Imanaka, and Sawicz mention head-end controllers would not result in a number of head-end controllers coupled to each server module via at least two signal paths, wherein each communication between a head-end controller and a server module is coincidentally sent through the two signal paths, as claimed. None of the references, Edmonds, Imanaka, and Sawicz, identify the special problems of delays in responding to subscriber requests or errors increasing as the demand placed upon the head-end in a video distribution system increases, resulting in unacceptable viewing experiences or disrupting video sessions for the subscriber. Therefore, even if the cited references were combined, the resulting system would not address this problem. Specifically, the combination of the references would not result in the claimed head-end controllers in a video distribution system, where the head-end controllers control video sessions for each subscriber by controlling the interaction and streaming of video information between the stream server at the head-end and the subscriber equipment.

The Examiner's position is that the directors 216, 220 in Edmonds are the same as the claimed head-end controllers. (See Final Office Action dated December 28, 2005, page 4, lines 4-7.) The directors 216, 220 in Edmonds recognize URL or IP addresses as being associated with a pool of servers and provide load-balancing to even out the load among the servers in the pool. (See Edmonds, Figure 5, col. 7 lines

Appeal Brief  
09/540,178  
Page 11 of 21

44-50.) Thus, the directors 216, 220 in Edmonds are not the same as the claimed head-end controllers and have nothing to do with controlling video sessions in a video distribution system. The other references cited, i.e., Imanaka and Sawicz, fail to make up for the deficiency of Edmonds. Imanaka is generally directed to an Ethernet communication redundancy method (see Imanaka, abstract) and fails to teach or suggest a video distribution system as claimed. Sawicz is generally directed to the problems of blocking and crosstalk in video switches. (See Sawicz col. 1, lines 43-56 and 66-67.) Sawicz fails to teach or suggest any separate head-end controllers coupled to each server module via at least two signal paths, as claimed. Sawicz discloses entertainment servers 24 connected to an entertainment switching unit 22, without any separate head-end controllers. (See Sawicz, figure 2.) Nothing in the references, Edmonds, Imanaka, and Sawicz, would have suggested modifying Edmonds with the Ethernet communication redundancy method of Imanaka in combination with Sawicz other than by using applicant's specification as a template for arriving at the claimed invention. It appears that the examiner is picking and choosing parts of the prior art in an attempt to arrive at the claimed invention, in the absence of any teaching or suggestion that would have led an artisan to the claimed invention. Thus, the combined teachings of Edmonds, Imanaka, and Sawicz would not result in the claimed head-end controllers coupled to each server module via at least two signal paths, wherein each communication between a head-end controller and a server module is coincidentally sent through the two signal paths. Therefore, claim 1 is patentable over Edmonds, Imanaka, and Sawicz under §103. Applicants respectfully request reversal of the rejection of claim 1.

Claims 2-14 and 26 depend, directly or indirectly, from claim 1 and, thus, inherit the patentable subject matter of claim 1, while adding additional elements and further defining elements. Therefore, claims 2-14 and 26 are also patentable over Edmonds, Imanaka, and Sawicz under §103 for at least the reasons given above with respect to claim 1. Applicants respectfully request reversal of the rejections of claims 2-14 and 26.

Appeal Brief  
09/540,178  
Page 12 of 21

**B. Claim 11 is Patentable over the Combination of Edmonds, Imanaka, Sawicz, and Deitz under §103**

For the same reasons given above with respect to claim 1 and because Deitz is generally directed to computer memory systems and controlling redundant arrays of independent disks (see Deitz, col. 1, lines 8-12), claim 11 is also patentable over the combination of Edmonds, Imanaka, Sawicz, and Deitz. The computer memory system of Deitz is different from the claimed video distribution system. For example, the computer memory system of Deitz lacks a head-end and subscriber equipment. Deitz fails to teach or suggest the claimed head-end controllers of the video distribution system. There is no motivation or suggestion in the disclosure of the computer memory system of Deitz or the other references, Edmonds, Imanaka, and Sawicz, to make a combination for the claimed video distribution system with a head-end and associated subscriber equipment. Therefore, claim 11 is patentable over Edmonds, Imanaka, Sawicz, and Deitz under §103. Applicants respectfully request reversal of the rejection of claim 11.

**C. Claims 12-14 are Patentable over the Combination of Edmonds, Imanaka, Sawicz, Deitz, and Miyamoto under §103**

For the same reasons given above with respect to claims 1 and 11 and because Miyamoto is generally directed to a client server alternation control system reduced in influence caused by alternation control of a server conducted when a fault has occurred (see Miyamoto, col. 1, lines 6-9), claims 12-14 are also patentable over the combination of Edmonds, Imanaka, Sawicz, Deitz, and Miyamoto. The client server alternation control system of Miyamoto is different from the claimed video distribution system. For example, the client server alternation control system of Miyamoto lacks a head-end and subscriber equipment. Miyamoto fails to teach or suggest the claimed head-end controllers of the video distribution system. There is no motivation or suggestion in the

Appeal Brief  
09/540,178  
Page 13 of 21

disclosure of the client server alternation control system of Miyamoto or the other references, Edmonds, Imanaka, Sawicz, and Deitz, to make a combination for the claimed video distribution system with a head-end and associated subscriber equipment. Therefore, claims 12-14 are patentable over Edmonds, Imanaka, Sawicz, Deitz, and Miyamoto under §103. Applicants respectfully request reversal of the rejection of claims 12-14.

Appeal Brief  
09/540,178  
Page 14 of 21

**CONCLUSION**

For the foregoing reasons, Applicants respectfully request reversal of the rejection of claims 1, 4-16, 20, and 22-26.

Respectfully submitted,

5/30/06



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Appeal Brief  
09/540,178  
Page 15 of 21

## CLAIMS APPENDIX

1. (Previously presented) In a video distribution system having provider equipment including a head-end, and associated subscriber equipment, an apparatus for improving fault tolerance, comprising:
  - a server comprising a plurality of server modules for storing content;
  - a video switch coupled to each of said server modules at said head-end for forwarding requested content from at least one of said plurality of server modules to said subscriber equipment;
  - a plurality of head-end controllers coupled to each server module of said plurality of server modules via at least two signal paths, wherein each communication between a head-end controller and a server module is coincidentally sent through the at least two signal paths.
  
2. (Previously Presented) The apparatus of claim 1, wherein said plurality of subscriber equipment interact with said at least one head-end controller and server for receiving video information upon request.
  
3. (Original) The apparatus of claim 2, wherein said at least two signal paths comprise:
  - at least two switches coupled between said at least one head-end controller and each of said server modules within said plurality of server modules.
  
4. (Original) The apparatus of claim 3, wherein:
  - an initial message sent between said at least one head-end controller and at least one of said server modules is routed from the at least one head-end controller, through one of said at least two switches, to said one of said server modules;
  - a redundant message sent between said at least one head-end controller and said at least one of said server modules is routed from the at least one head-end controller, through a second of said at least two switches, to said one of said server modules; and

Appeal Brief  
09/540,178  
Page 16 of 21

wherein said one of said server modules accepts either said initial message or said redundant message arriving first.

5. (Original) The apparatus of claim 4, wherein:

said one of said server modules disregards either said initial message or said redundant message arriving last.

6. (Original) The apparatus of claim 5, wherein:

an initial acknowledgement is routed from said one of said server modules, through one of said at least two switches, to the at least one head-end controller; a redundant acknowledgement is routed from said one of said server modules, through a second of said at least two switches, and to the at least one head-end controller; and

wherein said at least one head-end controller accepts either said initial acknowledgement or said redundant acknowledgement arriving first.

7. (Original) The apparatus of claim 6, wherein:

said at least one head-end controller disregards either said initial acknowledgement or said redundant acknowledgement arriving last.

8. (Original) The apparatus of claim 1, wherein said video switch comprises:

a plurality of I/O ports coupled to said plurality of server modules and said plurality of subscriber equipment for transferring said video information; and

at least two switch controllers coupled to said at least one head-end controller and said plurality of I/O ports, wherein one of said at least two switch controllers serves as a primary switch controller for routing said video information between said plurality of I/O ports, and a second switch controller serves as a secondary switch controller for monitoring status of said plurality of I/O ports and said primary switch controller, whereby said secondary switch controller initiates a switchover in an instance of a failure occurring at said primary switch controller.

Appeal Brief  
09/540,178  
Page 17 of 21

9. (Original) The apparatus of claim 8 wherein said primary switch controller is coupled to said at least one head-end controller via said one of said at least two switches, and said secondary switch controller is coupled to said at least one head-end controller via said second of said at least two switches.

10. (Original) The apparatus of claim 8, wherein said primary switch controller is coupled to said at least one head-end controller via said at least two switches, and said secondary switch controller is coupled to said at least one head-end controller via said at least two switches.

11. (Original) The apparatus of claim 8, wherein each of said at least two switch controllers further comprise:

- a switch processor for processing control commands between said head-end controllers and said primary and secondary switch controllers, between said primary switch controller and said secondary switch controller, and between said primary and secondary switch controllers and said plurality of I/O ports;

- a switch matrix IC for routing said video information between said primary switch controller and said plurality of I/O ports; and

- a switch controller timer for periodically querying the operational status of said primary and secondary switch controllers.

12. (Original) The apparatus of claim 8, wherein each I/O port of said plurality of I/O ports comprises:

- a memory table coupled to said at least two switch controllers for defining routing addresses of said video information to be routed, wherein said primary switch controller periodically updates each said memory table of said plurality of I/O ports;

- a plurality of control registers coupled to said at least two switch controllers for receiving periodic message commands from said primary switch controller;

- a plurality of timers coupled to said plurality of control registers;

- a plurality of status registers for registering error bits, in an instance where at least one of said plurality of timers elapses prior to being reset from one of said

Appeal Brief  
09/540,178  
Page 18 of 21

periodic message commands, wherein said secondary switch controller periodically polls said status registers to determine whether to initiate a switchover event.

13. (Original) The apparatus of claim 12 wherein said primary switch controller sends periodic pinging messages to said plurality of control registers for monitoring said switch matrix of said primary switch controller; said plurality of control registers set a first portion of said plurality of timers upon receiving said periodic ping messages; said primary switch controller sets an acknowledgement bit at said plurality of status registers; said secondary switch controller monitors said acknowledgment bits set in said plurality of status registers; and said secondary switch controller switches over to serve as said primary switch controller in an instance where a plurality of said acknowledgement bits are not set.

14. (Previously Presented) The apparatus of claim 12 wherein said primary switch controller sends periodic polling messages to said plurality of control registers to monitor an out-of-band signal path of said primary switch controller, said out-of-band signal path for transferring control information; said plurality of control registers set a second portion of said plurality of timers upon receiving said periodic polling messages; said plurality of control registers set an error bit at said plurality of status registers in an instance where said second portion of said plurality of timers elapse prior to a next polling message; said secondary switch controller monitors said error bits set in said plurality of status registers; and said secondary switch controller switches over to serve as said primary switch controller in an instance where a plurality of said error bits are detected.

15-25. (Canceled)

26. (Previously presented) The apparatus of claim 1, further comprising:  
a plurality of access controllers coupled to each head-end controller and said video switch, said access controllers for forwarding said requested content from said

Appeal Brief  
09/540,178  
Page 19 of 21

video switch to said subscriber equipment in response to a request for content from said subscriber equipment.

Appeal Brief  
09/540,178  
Page 20 of 21

**EVIDENCE APPENDIX**

(None)

Appeal Brief  
09/540,178  
Page 21 of 21

## **RELATED PROCEEDINGS APPENDIX**

No copies of decisions rendered by a court or the Board in a related appeal or interference are included as there have been no decisions by the court or the Board in a related appeal or interference.